

OEM Pressure Transmitter For General Industrial Applications Model O-10

WIKA Datasheet O-10

Applications

- Hydraulics and pneumatics
- Pumps and compressors
- Machine controls
- Building services

Special Features

- Pressure ranges from 100 psi to 8000 psi
- Non linearity $\leq 0.5\%$
- Available output signals include 4...20mA, 0...10V, 0...5V, 1...5V, 0.5...4.5V, 0.5V...4.5V ratiometric
- Electrical connections: male form A or C DIN connections, M12x1 4-pin, 6-foot cable, others
- Process connections: 1/4" NPT, 1/8" NPT, 7/16-20 UNF O-ring boss, G1/4, PT1/4, G1/4 female and others

Description

The Model O-10 pressure transmitter is designed to meet the pressure measurement requirements in many industrial and commercial applications. The O-10 features, specifications, and price make it suitable for OEM applications with an annual quantity of more than 1000 units per part number. The minimum release size is 50 pieces.

The O-10 is available in a large number of configurations to meet many application requirements. Options include many available process and electrical connections as well as all industry standard pressure ranges and output signals.

The O-10 is German-engineered and manufactured to meet global market requirements. International pressure units and process connections are available to meet global requirements. Approvals including UL and GOST are pending.

The O-10 can be private labeled with customer logo and model number if required.



Model O-10 Pressure Transmitter
Left: O-10 with cable, Center: O-10 with M12x1,
Right: O-10 with miniDIN style electrical connections.

Pressure ranges

Relative pressure							
psi	0 ... 100	0 ... 160	0 ... 200	0 ... 250	0 ... 300	0 ... 400	0 ... 500
	0 ... 600	0 ... 750	0 ... 800	0 ... 1000	0 ... 1500	0 ... 2000	0 ... 3000
	0 ... 4000	0 ... 5000	0 ... 6000	0 ... 7500	0 ... 8000		
bar	0 ... 6	0 ... 10	0 ... 16	0 ... 25	0 ... 40	0 ... 60	0 ... 100
	0 ... 160	0 ... 250	0 ... 400	0 ... 600			

Vacuum and +/- measuring range						
psi	-30 inHg ... +100	-30 inHg ... +160	-30 inHg ... +200	-30 inHg ... +300	-30 inHg ... +500	
bar	-1 ... +5	-1 ... +9	-1 ... +15	-1 ... +24	-1 ... +39	-1 ... +59

The listed pressure ranges are also available in kg/cm², kPa and MPa. Other measuring ranges on request.

Overpressure limit

2 times (3 times on request)

Vacuum resistance

Yes

Output signal

Signal type	Value
Current (2-wire)	4 ... 20 mA
Voltage (3-wire)	DC 0 ... 10 V
	DC 0 ... 5 V
	DC 1 ... 5 V
	DC 0.5 ... 4.5 V
Ratiometric (3-wire)	DC 0.5 ... 4.5 V

Other output signals available on request.

Load in Ω

Current (2-wire): $\leq (\text{power supply} - 7 \text{ V}) / 0.02 \text{ A}$

Voltage (3-wire): $> U_{\text{max}} / 1 \text{ mA}$

Ratiometric (3-wire): $> 4.5 \text{ k}$

Voltage supply

Power supply

Current output: DC 8 ... 30 V

Voltage output: DC 8 ... 30 V

Voltage output (0 ... 10 V): DC 14 ... 30 V

Ratiometric output: DC 5 V \pm 10 %

The power supply for the pressure transmitter must be made via an energy-limited electrical circuit in accordance with section 9.3 of UL/EN/IEC 61010-1 or an LPS to UL/EN/IEC 60950-1 or class 2 per UL1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 6500 ft. should the pressure transmitter be used at this altitude.

Total current consumption

Current output: Signal current, maximum 25 mA

Voltage output: 5 mA

Accuracy

Non-linearity (IEC 61298-8)

≤ ± 0.5 % of span BFSL

For pressure ranges 0 ... 100 psi, 0 ... 6 bar, 0 ... 10 bar the following applies:

≤ ± 0.6 % of span BFSL

Zero offset

≤ ± 0.5 % of span

For pressure ranges 0 ... 100 psi, 0 ... 6 bar, 0 ... 10 bar the following applies:

≤ ± 0.7 % of span

Accuracy at room temperature

≤ ± 1.2 % of span

Temperature error (from 0 ... 80 °C)

≤ ± 1.5 % of span

Long-term stability

≤ ± 0.3 % of span (per year)

Settling time

< 2 ms

Reference conditions (per IEC 61298-1)

Temperature:	59 ... 77°F (15 ... 25 °C)
Atmospheric pressure:	28 ... 31 inches of mercury (950 ... 1050 mbar)
Humidity:	45 ... 75 % relative
Power supply:	DC 24 V

Operating conditions

Vibration resistance

20 g (20 ... 2000 Hz, 120 min.) per IEC 60068-2-6 (vibration under resonance)

Shock resistance

40 g (6 ms) per IEC 60068-2-27 (mechanical shock)

Service life

≥ 10 million load cycles

Impact resistance

Resistant to an impact onto concrete from 3 ft

Temperatures

Operation: -22 ... + 212 °F (-30 ... +100 °C)

Storage: -22 ... + 212 °F (-30 ... +100 °C)

Process connections

Standard	Thread
EN 837	G 1/8 B ²⁾ G 1/4 B G 1/4 female G 3/8 B
DIN 3852-E	G 1/4 A ^{1) 3)} M14 x 1,5 ³⁾
ANSI/ASME B1.20.1	1/8 NPT ²⁾ 1/4 NPT ¹⁾ 1/4 NPT female
ISO 7	R 1/4 ¹⁾ R 3/8
KS	PT 1/4 ^{1) 4)} PT 3/8 ⁴⁾
SAE	7/16-20 UNF O-ring BOSS ¹⁾ 9/16-18 UNF O-ring BOSS

All process connections are available, as standard, with a pressure port with a diameter of 3.5 mm.

1) Optional diameters 6 mm, 0.6 mm, 0.3 mm on request.

2) Maximum measuring range 6000 psi (400 bar).

3) Sealing material available in NBR and FPM/FKM.

4) Sealing made of FPM/FKM.

Materials

Non-wetted parts

316L stainless steel, PBT GF 30

Wetted parts

316L stainless steel, 13-8 PH

Approvals, directives and certificates

CE conformity

■ EMC directive

2004/108/EC EN 61326 emission (group 1, class B) and interference immunity (industrial application)

■ Pressure equipment directive

97/23/EC

RoHS conformity

Yes

Electrical connections

Specifications

Description	Ingress protection	Cable material
Angular connector DIN 175301-803 A	IP 65	-
Angular connector DIN 175301-803 C	IP 65	-
Circular connector M12 x 1 (4-pin)	IP 67	-
Cable outlet, unshielded (2 m) ¹⁾	IP 67	PVC
Cable outlet, shielded (2 m)	IP 67	PVC

1) up to a maximum of 80 °C permitted

The stated ingress protection (per IEC 60529) only applies when plugged in using mating connectors that have the appropriate ingress protection.

Other connections available on request (e.g. Metri Pack 150 series).

Mating connector are not included in the delivery.

Mating connectors (with and without cable) are available as accessories at additional cost.

Electrical safety

Short-circuit resistance: S₊ vs. 0V

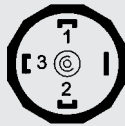
Reverse polarity protection: U_B vs. 0V

Overvoltage protection: DC 36 V

Isolation voltage: DC 750 V

Connection diagram

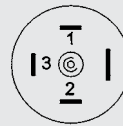
Angular connector DIN 175301-803 A



Assignment

	U _B	0V	S ₊
2-wire	1	2	-
3-wire	1	2	3

Angular connector DIN 175301-803 C



Assignment

	U _B	0V	S ₊
2-wire	1	2	-
3-wire	1	2	3

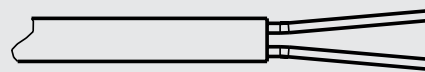
Circular connector M12 x 1, 4-pin



Assignment

	U _B	0V	S ₊
2-wire	1	3	-
3-wire	1	3	4

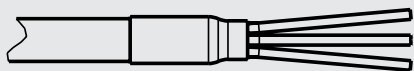
Cable outlet, unshielded



Assignment

	U _B	0V	S ₊
2-wire	brown	green	-
3-wire	brown	green	white

Cable outlet, shielded



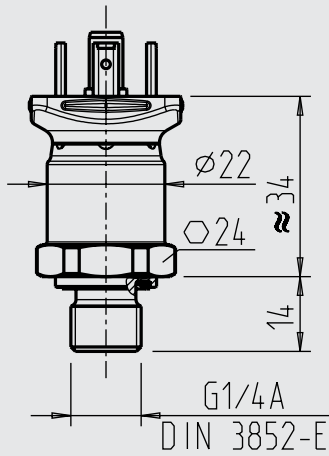
Assignment

	U _B	0V	S ₊
2-wire	brown	blue	-
3-wire	brown	blue	black

Dimensions in mm (25.4 mm = 1 inch)

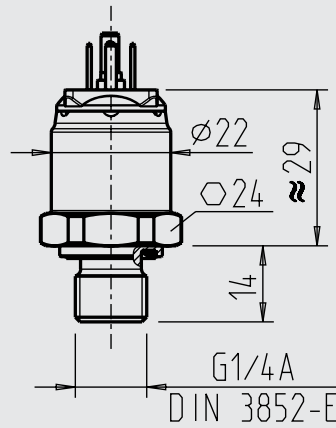
Pressure transmitter

with angular connector form A



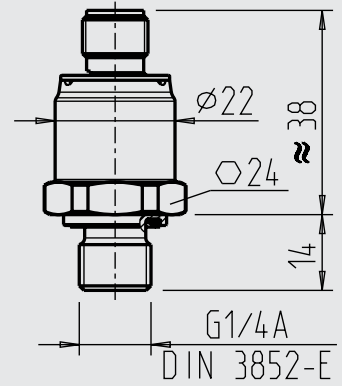
Weight: approx. 80 g

with angular connector form C



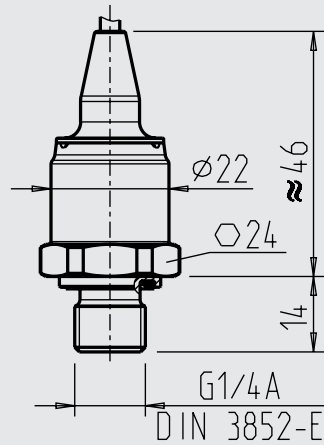
Weight: approx. 80 g

with M12 x 1 circular connector



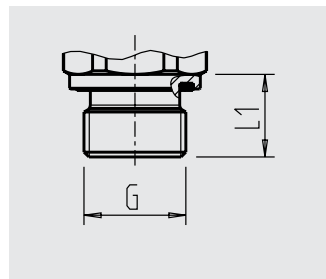
Weight: approx. 80 g

with cable outlet

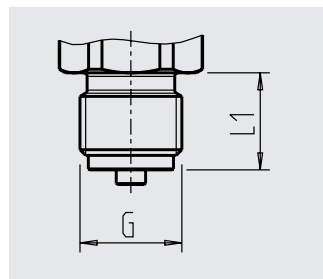


Weight: approx. 80 g

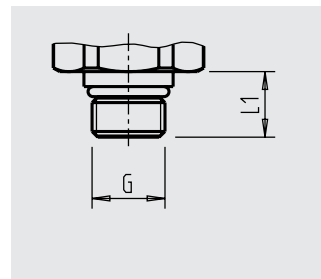
Process connections



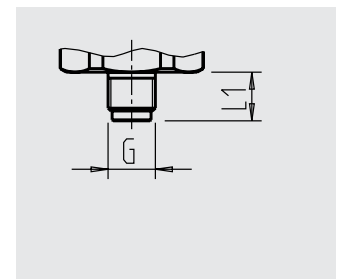
G	L1
G 1/4 A DIN 3852-E	14
M14 x 1.5	14



G	L1
G 1/4 B EN 837	13
G 3/8 B EN 837	16

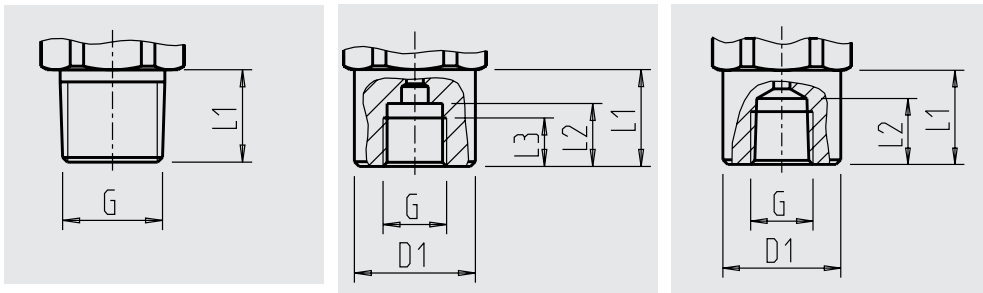


G	L1
9/16-18 UNF BOSS	13
7/16-20 UNF BOSS	12



G	L1
G 1/8 B EN 837	10

Process connections



G	L1
1/4 NPT	13
R 1/4	13
R 3/8	15
PT 1/4	13
PT 3/8	15

G	L1	L2	L3	D1
G 1/4	20	15	12	Ø 25

G	L1	L2	L3
1/4 NPT	20	14	Ø 25

For information on tapped holes and welding sockets, see Technical Information IN 00.14 at www.wika.com.

Accessories and spare parts

Mating connector

	Order number without cable	with 6 ft cable	with 15 ft cable
Angular connector DIN 175301-803 A			
■ with cable gland, metric	11427567	11225793	11250186
■ with cable gland, conduit	11022485	-	-
Angular connector DIN 175301-803 C			
	1439081	11225823	11250194
Circular connector M12 x 1 (4-pin)			
■ straight	2421262	11250780	11250259
■ angled	2421270	11250798	11250232

Seals for mating connectors

Angular connector DIN 175301-803 A	1576240
Angular connector DIN 175301-803 C	11169479

Use of accessories other than those listed above may invalidate product approvals.

Ordering information

Model / Pressure range / Output signal / Process connection / Electrical connection

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WIKAI Instrument Corporation
1000 Wiegand Boulevard
Lawrenceville, GA 30043-5868
Tel: 888-WIKA-USA • 770-513-8200
Fax: 770-338-5118
E-Mail: info@wika.com
www.wika.com